

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) An olefin polymerization catalyst comprising:

~~(A) a transition metal compound represented by the following formula (I),~~

and

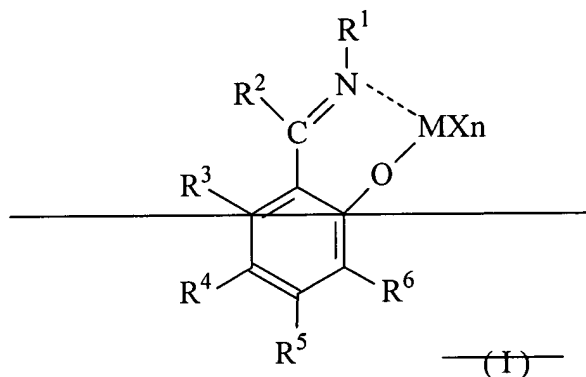
~~— (B) at least one compound selected from the group consisting of:~~

~~— (B-1) an organometallic compound,~~

~~— (B-2) an organoaluminum oxy compound, and~~

~~— (B-3) a compound which reacts with the transition metal compound~~

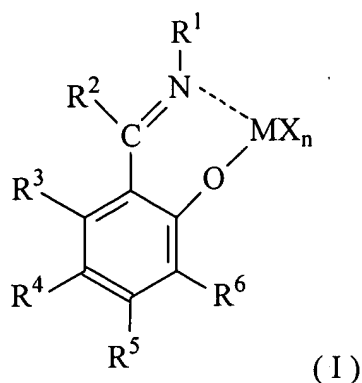
~~(A) to form an ion pair:~~



a transition metal compound; and

at least one compound selected from the group consisting of an organometallic compound, an organoaluminum oxy-compound and a compound which reacts with said transition metal compound to form an ion pair,

wherein said transition metal compound has the following formula (I):



wherein M is a transition metal atom selected from the group consisting of Groups 3-7 and 11 of the periodic table,

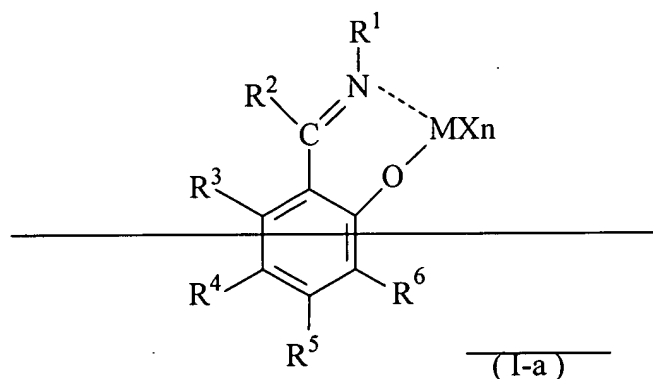
$R^1$  to  $R^6$  are the same or different, and are each a hydrogen atom, a halogen atom, a hydrocarbon group, a heterocyclic compound residue, an oxygen-containing group, a nitrogen-containing group, a boron-containing group, a sulfur-containing group, a phosphorus-containing group, a silicon-containing group, a germanium-containing group or a tin-containing group, and two or more of them may be bonded to each other to form a ring,

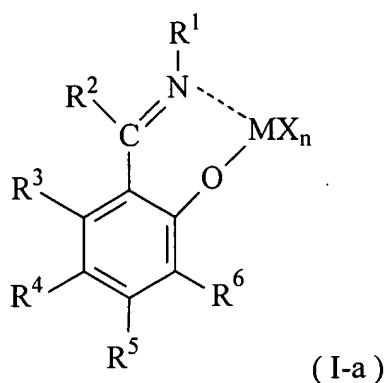
n is a number making (I) electrically neutral, and

X is a hydrogen atom, a halogen atom, a hydrocarbon group, an oxygen-containing group, a sulfur-containing group, a nitrogen-containing group, a boron-containing group, an aluminum-containing group, a phosphorus-containing group, a halogen-containing group, a heterocyclic compound residue, a silicon-containing group, a germanium-containing group or a tin-containing group, and when n is 2 or greater, plural groups X are the same or different ~~and may be bonded to each other to form a ring.~~

2. (Original) The olefin polymerization catalyst as claimed in claim 1, wherein  $R^6$  in the formula (I) is a halogen atom, a hydrocarbon group, a heterocyclic compound residue, an oxygen-containing group, a nitrogen-containing group, a boron-containing group, a sulfur-containing group, a phosphorus-containing group, a silicon-containing group, a germanium-containing group or a tin-containing group.

3. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein the transition metal compound represented by the formula (I) is a transition metal compound represented by the following formula (I-a):





wherein M is a transition metal atom selected from the group consisting of Groups 3-7 and 11 of the periodic table,

$R^1$  to  $R^6$  are the same or different, and are each a hydrogen atom, a halogen atom, a hydrocarbon group, a heterocyclic compound residue, a hydrocarbon-substituted silyl group, a hydrocarbon-substituted siloxy group, an alkoxy group, an alkylthio group, an aryloxy group, an arylthio group, an acyl group, an ester group, a thioester group, an amido group, an imido group, an amino group, an imino group, a sulfonester group, a sulfonamido group, a cyano group, a nitro group, a carboxyl group, a sulfo group, a mercapto group or a hydroxyl group, and two or more of them may be bonded to each other to form a ring, and

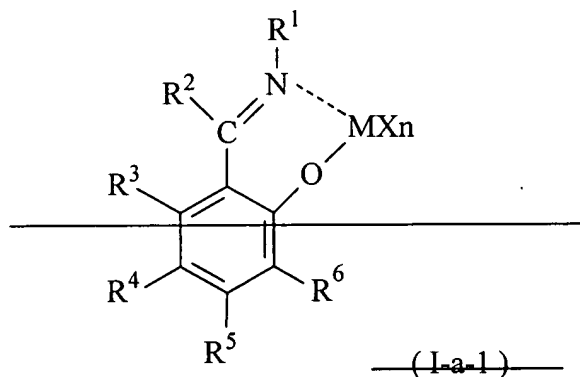
n is a number making (I) (I-a) electrically ~~neutral~~, and neutral.

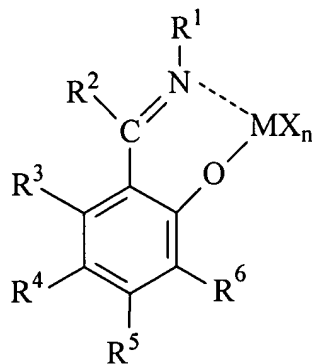
~~X is a hydrogen atom, a halogen atom, a hydrocarbon group, an oxygen-containing group, a sulfur-containing group, a nitrogen-containing group, a boron-containing group, an aluminum-containing group, a phosphorus-containing group, a halogen-containing group, a heterocyclic compound residue, a silicon-containing group, a germanium-containing group or a tin-containing group, and~~

~~when n is 2 or greater, plural groups X are the same or different and may be bonded to each other to form a ring.~~

4. (Original) The olefin polymerization catalyst as claimed in claim 3, wherein  $R^6$  in the formula (I-a) is a halogen atom, a hydrocarbon group, a heterocyclic compound residue, a hydrocarbon-substituted silyl group, a hydrocarbon-substituted siloxy group, an alkoxy group, an alkylthio group, an aryloxy group, an arylthio group, an acyl group, an ester group, a thioester group, an amido group, an imido group, an amino group, an imino group, a sulfonester group, a sulfonamido group, a cyano group, a nitro group, a carboxyl group, a sulfo group, a mercapto group or a hydroxyl group.

5. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein the transition metal compound represented by the formula (I) is a transition metal compound represented by the following formula (I-a-1):





(I-a-1)

wherein M is a transition metal atom selected from the group consisting of Groups 3-7 and 11 of the periodic table,

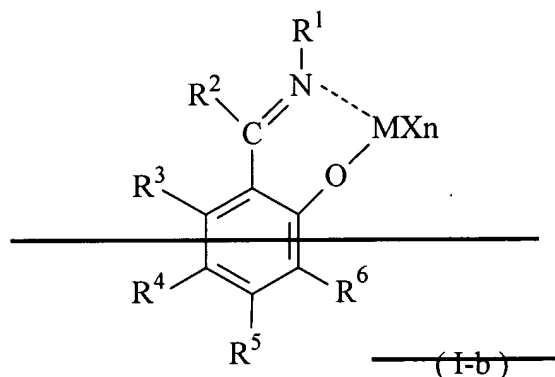
R<sup>1</sup> to R<sup>6</sup> are the same or different, and are each a hydrogen atom, a halogen atom, a hydrocarbon group, a heterocyclic compound residue, a hydrocarbon-substituted silyl group, a hydrocarbon-substituted siloxy group, an alkoxy group, an alkylthio group, an aryloxy group, an arylthio group, an acyl group, an ester group, a thioester group, an amido group, an imido group, an amino group, an imino group, a sulfonester group, a sulfonamido group, a cyano group, a nitro group or a hydroxyl group, and two or more of them may be bonded to each other to form a ring,

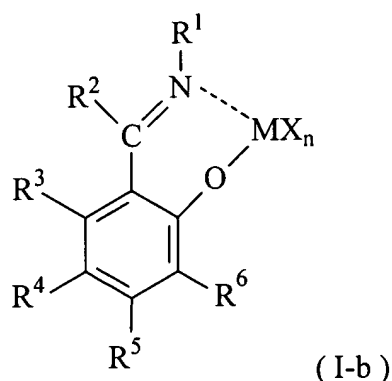
n is a number making (I-a-1) electrically neutral, and

X is a hydrogen atom, a halogen atom, a hydrocarbon group of 1 to 20 carbon atoms, a halogenated hydrocarbon group of 1 to 20 carbon atoms, an oxygen-containing group, a sulfur-containing group or a silicon-containing group, and when n is 2 or greater, plural groups X are the same or different ~~and may be bonded to each other to form a ring.~~

6. (Original) The olefin polymerization catalyst as claimed in claim 5, wherein  $R^6$  in the formula (I-a-1) is a halogen atom, a hydrocarbon group, a heterocyclic compound residue, a hydrocarbon-substituted silyl group, a hydrocarbon-substituted siloxy group, an alkoxy group, an alkylthio group, an aryloxy group, an arylthio group, an acyl group, an ester group, a thioester group, an amido group, an imido group, an amino group, an imino group, a sulfonester group, a sulfonamido group, a cyano group, a nitro group or a hydroxyl group.

7. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein the transition metal compound represented by the formula (I) is a transition metal compound represented by the following formula (I-b):





wherein M is a transition metal atom selected from the group consisting of Groups 3-7 and 11 of the periodic table,

$R^1$  to  $R^6$  are the same or different, and are each a hydrogen atom, a halogen atom, a hydrocarbon group, a hydrocarbon-substituted silyl group, an alkoxy group, an aryloxy group, an ester group, an amido group, an amino group, a sulfonamido group, a cyano group or a nitro group, and two or more of them may be bonded to each other to form a ring.

8. (Currently Amended) The olefin polymerization catalyst as claimed in ~~claim 5~~, claim 7, wherein  $R^6$  in the formula (I-b) is a halogen atom, a hydrocarbon group, a hydrocarbon-substituted silyl group, an alkoxy group, an aryloxy group, an ester group, an amido group, an amino group, a sulfonamido group, a cyano group or a nitro group.



9. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein M in the transition metal compound (A) is a transition metal atom selected from Group 3 of the periodic table.

10. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein M in the transition metal compound (A) is a transition metal atom selected from Group 4 of the periodic table.

11. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein M in the transition metal compound (A) is a transition metal atom selected from Group 5 of the periodic table.

12. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein M in the transition metal compound (A) is a transition metal atom selected from Group 6 of the periodic table.

13. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein M in the transition metal compound (A) is a transition metal atom selected from Group 7 of the periodic table.

14. (Currently Amended) The olefin polymerization catalyst as claimed in claim 1, wherein M in the transition metal compound (A) is a transition metal atom selected from Group 11 of the periodic table.

15. (Withdrawn) A method for polymerizing olefin using the olefin polymerization catalyst as claimed in any one of claims 1 to 14.

AMENDMENTS TO THE DRAWINGS

Attached hereto is(are) two (2) sheet(s) of correct formal drawings that comply with the provisions of 37 C.F.R. § 1.84. The corrected formal drawings incorporate the following drawing changes:

The corrected drawings replace "Y" with "Q", subscript "n" and also correct a spelling error.

It is respectfully requested that the corrected formal drawings be approved and made a part of the record of the above-identified application.